Longshot - 7-11-00 Sampling Results
R.T. Lentz

ANALYTICAL/DOCUMENTED CONTAMINATION

Media	Distance	Location	Rate of discharge/ Volume (gpm or cy)	Contaminant mg/kg	Exceedance	Back-ground
Tailings		On-site	300 cy	Cd, Pb, Zn 32 | 1800 | 3700	State cleanup Stnds. (MTCA)	
			Analysis of Tailings sample			
				Ag - 8.9		
				Fe - 32,000		
Adit Discharge ~10gpm (7/00) →				Cd 0.51 mg/l		
				Pb 1.2 "		
				Ag N.D. "		
				Zn 35 "		
				Fe N.D.		
Tailing infiltration pond				Cd N.D		
				Pb N.D		
				Ag N.D		
				Zn 21 mg/l		
				Fe N.D.		

ADDITIONAL STUDIES

Biological studies that shows a decrease in the number and lower species diversity downstream of the site __ **Unknown**_____

Increased mortality in nesting wildlife __ **Unknown** _____

Other critical contaminant information

_____

_____

_____

See list of valid values

*Required Fields

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East o Tacoma, WA 98424
(253) 922-2310 o FAX (253) 922-5047
e-mail: info@saslab.com

TRANSMITTAL MEMORANDUM

DATE: August 9, 2000

TO: Rod Lentz
Okanogan National Forest
Box 950 1240 S. Second Avenue
Okanogan, WA 98840

PROJECT: LONGSHOT

REPORT NUMBER: 91435

Enclosed are the test results for three samples received at Sound Analytical Services on July 31, 2000.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

SOUND ANALYTICAL SERVICES, INC.

Client Name	Okanogan National Forest
Client ID:	LONGSHOT
Lab ID:	91435-01
Date Received:	7/31/00
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Cadmium	0.00051	0.0005	
Lead	0.0012	0.0005	
Silver	ND	0.0005	
Zinc	0.035	0.004	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Okanogan National Forest
Client ID:	LONGSHOT
Lab ID:	91435-01
Date Received:	7/31/00
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Iron	ND	0.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Okanogan National Forest
Client ID:	POND
Lab ID:	91435-02
Date Received:	7/31/00
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Cadmium	ND	0.0005	
Lead	ND	0.0005	
Silver	ND	0.0005	
Zinc	0.021	0.004	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Okanogan National Forest
Client ID:	POND
Lab ID:	91435-02
Date Received:	7/31/00
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Iron	ND	0.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Okanogan National Forest
Client ID:	TAILINGS
Lab ID:	91435-03
Date Received:	7/31/00
Date Prepared:	8/3/00
Date Analyzed:	8/4/00
Dilution Factor	1
% Solids	100

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Cadmium	32	0.91	
Iron	32000	18	
Lead	1800	1.8	
Silver	8.9	1.8	
Zinc	3700	1.8	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - T678A
Date Received:	-
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Cadmium	ND	0.0005	
Lead	ND	0.0005	
Silver	ND	0.0005	
Zinc	ND	0.004	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - T678A
Date Received:	-
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Iron	ND	0.1	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID:	AN-A0700201
Lab ID:	91458-8A
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
QC Batch ID:	T678A

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Cadmium	0	0.1	0.107	107	
Lead	0	1	1.02	102	
Silver	0	0.6	0.636	106	
Zinc	0.0057	1	1.2	120	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID:	AN-A0700201
Lab ID:	91458-08
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
QC Batch ID:	T678A

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Iron	0.38	2	2.56	109	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID:	AN-A0700201
Lab ID:	91458-8A
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
QC Batch ID:	T678A

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Cadmium	0	0	NC	
Lead	0	0	NC	
Silver	0	0	NC	
Zinc	0.0057	0.0063	-10.0	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID:	AN-A0700201
Lab ID:	91458-08
Date Prepared:	8/4/00
Date Analyzed:	8/7/00
QC Batch ID:	T678A

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Iron	0.38	0.38	0.0	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - S675A
Date Received:	-
Date Prepared:	8/3/00
Date Analyzed:	8/4/00
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Cadmium	ND	1	
Iron	ND	20	
Lead	ND	2	
Silver	ND	2	
Zinc	ND	2	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	S675A
Date Prepared:	8/3/00
Date Analyzed:	8/4/00
QC Batch ID:	S675A

Metals by ICP - USEPA Method 6010

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Iron	0	400	384	96	399	99.8	3.9	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID:	JR-13
Lab ID:	91466-01
Date Prepared:	8/3/00
Date Analyzed:	8/4/00
QC Batch ID:	S675A

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Cadmium	2.4	20.1	20.7	91	
Iron	19000	401	21700	680	X7a
Lead	23	201	205	91	
Silver	0	120	111	92	
Zinc	43	201	227	92	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID:	JR-13
Lab ID:	91466-01
Date Prepared:	8/3/00
Date Analyzed:	8/4/00
QC Batch ID:	S675A

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Cadmium	2.4	2.9	-19.0	
Iron	19000	22000	-15.0	
Lead	23	22	4.4	
Silver	0	0	NC	
Zinc	43	58	-30.0	

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DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq 40\%$.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be $> 40\%$. The higher result was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

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10/2

SAS Lab No. 91435

TURNAROUND REQUEST (business days)
Standard (10 days) X
RUSH: 24 hrs ___ 48 hrs ___ 5 day ___

CHAIN OF CUSTODY/REQUEST FOR LABORATORY ANALYSIS

Client:
Project Name: Longshot
Contact: Rod Lentz
Phone No.: 509-826-3274
Fax No.: 509-422-2014
Email: rtlentz@fs.fed.us

Lab Use Only	Sample ID	Date	Time	Matrix	# of Containers	Analyses Requested: Zinc (ICP)	Lead (GFAA)	Silver (ICP)	Cadmium (ICP)	Iron (ICP)
	Longshot Adit	7/11	1450	Liquid	1	X	X	X	X	X
	Pond	7/11	1515	Liquid	1	X	X	X	X	X
	tailings	7/11	1530	soil	1	X	X	X	X	X

	Signature	Printed Name	Firm	Time/Date	Special Instructions
Relinquished By:	Rodney Lentz	Rodney Lentz	USFS	1000/7/27/00	
Received By	ASTROM	ASTROM	SAS	7/31/00 1015	
Relinquished By:					
Received By					
Relinquished By:					
Received By					

COC No. ___